PROJECT: 23-1028 REST, TUCANNON PA 34.1-34.2 RESTORATION

Sponsor: Columbia Conservation Dist Program: Salmon State Projects Status: Application Resubmitted

Parties to the Agreement

PRIMARY SPONSOR

Columbia Conservation District

Address 202 S Second St

City Dayton **State** WA **Zip** 99328-1327

Org Type District-Conservation

Vendor # SWV0015114-00

UBI

Date Org created

Org Notes

link to Organization profile

☐ Org data updated

SECONDARY SPONSORS

No records to display

MANAGING AGENCY

Recreation and Conservation Office

LEAD ENTITY

Snake River Salmon Rec Bd LE

QUESTIONS

#1: List project partners and their role and contribution to the project.

External Systems

SPONSOR ASSIGNED INFO

Sponsor-Assigned Project Number

Sponsor-Assigned Regions

EXTERNAL SYSTEM REFERENCE

Source	Project Number	Submitter
HWS	23-1028	AFitzgerald

Project Contacts

Contact Name Primary Org	Project Role	Work Phone	Work Email
Kendall Barrameda Rec. and Conserv. Office	Project Manager	(360) 764-9086	Kendall.Barrameda@rco.wa.gov
Aneesha Dieu	Project Contact	(509) 382-4273	districtmanager@columbiacd.com
Ali Fitzgerald Snake River Salmon Rec Bd LE	Lead Entity Contact	(509) 382-4115	ali@snakeriverboard.org

Worksites & Properties

#	Worksite Name
#1	Tucannon PA 34.1 & 34.2

Restoration	Property Name
✓	Rubenser PA 34.1
✓	Hedlund PA 34.1 & 34.2

Worksite Map & Description

Worksite #1: Tucannon PA 34.1 & 34.2

WORKSITE ADDRESS

Street Address 219 Highway 261
City, State, Zip Dayton WA 99328

Worksite Details

Worksite #1: Tucannon PA 34.1 & 34.2

SITE ACCESS DIRECTIONS

Bridge access to residence splits PA 34.1 & Pa 34.2

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Chinook-Snake River Spring/Summer, Tucannon River, Threatened		✓	✓	Declining
Steelhead-Snake River, Tucannon River, Threatened	✓	✓	✓	Declining
Chinook-Snake River Fall, Snake River Lower Mainstem, Threatened	✓	✓	✓	Rising

Reference or source used

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Bull Trout	Overwintering/Adult holding

Questions

#1: Give street address or road name and mile post for this worksite if available.

219 Highway 261 - Mile Post 1-2

Project Location

RELATED PROJECTS

Projects in PRISM

PRISM Number	Project Name	Program Name	Current Status	Relationship Type	Notes
20-1052 P	Tucannon PA 34.1-34.2 Design	Salmon Federal Projects	Active	Earlier Phase	Preliminary Designs

Projects not in PRISM

Project Number	Project Name	Current Status	Relationship Type	Project Funder
	Tucannon Geomorphic Assessment & R	Completed	Current Phase	Bonneville Power Association

Related Project Notes

Questions

#1: Project location. Describe the geographic location, water bodies, and the location of the project in the watershed, i.e. nearshore, tributary, main-stem, off-channel, etc.

Located near the lower end of the main-stem Tucannon Watershed, east of Starbuck, west of Highway 12, on Highway 261. Where the confluence of the Pataha enter the Tucannon.

#2: How does this project fit within your regional recovery plan and/or local lead entity's strategy to restore or protect salmonid habitat? Cite section and page number.

In the Snake River Salmon REcovery Plan 5.5.3.1 pg. 160 lists the lower Tucannon and (mouth of the Pataha) as Snake River DPS/ESU for steelhead and spring/summer Chinook. Primary limiting factors listed are habitat quantity and sedimentation. Secondary limited factors are habitat diversity, flow, channel stability, predation, pathogens and temperature.

#3: Is this project part of a larger overall project?

Yes

#3a: How does this project fit into the sequencing of the larger project?

This project is one of 45 projects listed in the Draft Tucannon Habitat Restoration and Conceptual Restoration Plan (Anchor QEA 2020) that has a ~10 year project projection.

#4: Is the project on State Owned Aquatic Lands? Please contact the Washington State Department of Natural Resources to make a determination. **Aquatic Districts and Managers**

No

This project is located on private lands.

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Property Details

Property: Rubenser PA 34.1 (Worksite #1: Tucannon PA 34.1 & 34.2)

✓ **Restoration**

LANDOWNER

Name	F & R Farms
Address	PO Box 325
City	Starbuck
State	WA Zip 99359
Type	Local

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Proposed
Term Length	Fixed # of years
# Yrs	10
Expiration Date	09/30/2033
Note	

Property: Hedlund PA 34.1 & 34.2 (Worksite #1: Tucannon PA 34.1 & 34.2)

✓ **Restoration**

LANDOWNER

Name	Ed Hedlund
Address	12025 7th Ave NW
City	Seattle
State	WA Zip 98177-4522
Type	Local

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Proposed
Term Length	Fixed # of years
# Yrs	10
Expiration Date	09/30/2033
Note	

Project Proposal

Project Description

Columbia Conservation District will be sponsoring Project Area PA-34.1/2 for restoration. This project proposal will cover between ~RM 11.49 to ~RM 12.7 of PA-34.1/2 and is located at 46.506214, -118.010553. In progression of the PA-34.1/2 design project, the primary goal of this project is to address the Primary Limiting Factors identified in the Salmon Recovery Plan for SE Washington (SRSRB 2011) and the Tucannon Sub basin Plan (CCD 2004) and prioritized in the GARP (Anchor 2020) by restoring to the nearest possible extent, a healthy naturally functioning river channel and floodplain. Anticipated goals are; Short Term (3 yrs)- Install ~58 LWD structures within the bank full channel (2.4 km) to increase channel complexity. Specifically, they will create pool habitat, instream cover habitat, increase channel roughness, encourage substrate sorting and increase floodplain connectivity. Increase pool frequency and volume > 50% within 3 years Increase inundation frequency and duration on acres of available floodplain from the >5yr interval to 2 key pieces beyond 10 years. Anticipated a 50% increase side channels within the first 10 yrs. Connect disconnected low floodplain (<2 yr flow) ~23 acres. Planting to restore floodplain and upland terrace forest roughly 1500 trees interstitially.

Project Questions

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#1: Problem statement. What are the problems your project seeks to address? Include the source and scale of each problem. Describe the site, reach, and watershed conditions. Describe how those conditions impact salmon populations. Include current and historic factors important to understand the problems.

The Tucannon River watershed supports ESA-listed Snake River summer steelhead (Oncorhynchus mykiss), Snake River spring and fall chinook salmon (O. tshawytscha), and Columbia River bull trout (Salvelinus confluentus) which have all been identified as aquatic focal species of concern in the Snake River Salmon Recovery Plan (2011). Winter rearing habitat is limiting for all three species within the basin and very little instream habitat has been conducted in the lower basin to improve winter habitat. In 2019, a study (Crawford 2019) conducted by WDFW identified elevated mortality of upper basin natural chinook parr in the middle and lower basin, leading the Tucannon Program to increase it priority for project improving flood connectivity and channel complexity through the basin with additional priority in areas with elevated winter mortality. Understanding the existing Tucannon River system is critical to developing restoration actions that will directly improve habitat conditions for ESA-listed and non-listed species. The Project Area of 34.1 & .2 (lower Tucannon) has been identified as an area that is channelized and impacted by upland processes (lack of sinuosity, elevated fine sediment, and high summer water temperatures) has a confined floodplain, low channel complexity and offers limited overwintering rearing habitat for juvenile Spring Chinook Salmon and all life stages of Steelhead as stated in the Tucannon Juvenile Salmonid Survival and Habitat Utilization (WDFW Sept 2019). The full scope of the work would be identified during the initial vetting of restoration benefits with the landowner, and this preliminary design process would be the first step in maximizing restoration potential in this high priority river reach. Legacy land management activities in association with natural geomorphic processes have led to limited instream and floodplain habitat complexity, degraded floodplain connectivity and riparian conditions, elevated summer temperatures, and elevated embeddedness levels as key limiting factors for Chinook and steelhead (Tucannon River Habitat Restoration Prioritization and Conceptual Restoration Plan (HRPCRP), Anchor QEA 2011a/April 2020). This project aims to address multiple lingering factors through stream habitat restoration and floodplain connectivity, complexity and diversity habitat enhancement which will contribute to natural condition processes. As described in the Tucannon Juvenile Salmonid Survival and Habitat Utilization (WDFW Sept 2019) the studies conducted have shown juvenile Spring Chinook and Steelhead utilize the area between the Upper Tucannon River (UTR) and Middle Tucannon River (MTR) in which this project falls in between these designated areas and it would be of most benefit from improving over wintering and high refugia habitats. Restoration of such habitat include creation of pools with cover and large woody debris with interstitial spaces amid the substrate.

#2: Describe the limiting factors, and/or ecological concerns, and limiting life stages (by fish species) that your project expects to address.

The Tucannon Habitat Restoration and Conceptual Restoration Plan (Anchor Draft 2020) states elevated water temperatures and low pool frequency, agricultural production lands, floodplain connectivity, and low instream complexity are all factors in this portion of the Tucannon River. The project area itself is confined by high banks or levees and the valley wall. The confluence of the Pataha and the Tucannon creates a dynamic sediment transport/distribution consideration as the Pataha delta has continued to increase in size and variability post flood in February of 2020. Potential impacts of the multiple entrances and poor braided flow through the riparian zone include heavy deposits of fine enriched sediments potentially creating poor instream habitat structure in the Tucannon for overwintering juvenile Spring Chinook and Steelhead. The Tucannon Juvenile Salmonid Survival Project (WDFW Sept 2020) emphasizes the need for restoring overwintering habitat due to this area being more channelized and impacted by upland processes and previous flood control efforts. We would like to restore the project area to better develop the delta riparian plant community from the reed canary grass and red alder grove to a more stable cottonwood wetland delta better suited to all life stages of Chinook, steelhead and bull trout immediately and over time. These actions will also increase holding and spawning habitat for adult steelhead and overwinter holding habitat for Chinook and bull trout.

#3: What are the project goals? The goal of the project should be to solve identified problems by addressing the root causes. Then clearly state the desired future condition. Include which species and life stages will benefit from the outcome, and the time of year the benefits will be realized. **Example Goals and Objectives**

Our goals are to implement restoration activities that are identified in the Salmon
Recovery Plan for SE Washington (SRSRB 2011) and the Tucannon Sub basin Plan (CCD 2004) by
restoring to the nearest possible extent a healthy naturally functioning river channel and floodplain increasing juvenile spring Chinook and steelhead overwintering habitats. This project will also improve spawning conditions for fall Chinook and improve winter rearing and adult holding habitats for migratory bull trout. The project area is 3/4 in CREP with an average of ~180' riparian buffer that we fully anticipate to capture with the removal of offset levees and addition of off-set levees. The landowner has agreed to utilize available floodplain area not in CREP as well. By increasing river complexity, connecting available floodplain, creating a higher pool frequency, and promoting increased sediment sorting and distribution, we aim to improve geomorphic processes and create suitable habitat that will support four ESA depressed populations of salmonids.

#4: What are the project objectives? Objectives support and refine biological goals, breaking them down into smaller steps. Objectives are specific, quantifiable actions the project will complete to achieve the stated goal. Each objective should be SMART (Specific, Measurable, Achievable, Relevant, and Time-bound). **Example Goals and Objectives**

Short Term (3 yrs):
1. Increase instream river complexity through strategic placement of Large Wood Structures to
provide additional in-river habitat for juvenile rearing and adult holding. This includes:

- Increase pool frequency and volume > 50% within 3 years
- Increase channel complexity, activate side channels and increase floodplain connection.

2. Increase utilization of available project area floodplain by encouraging overbank flow at the 1-3 flow return interval. This will be accomplished through the removal of levee's and addition of off-set levee's on both left and right banks.

- Address confining features
- Bridge- Work with geomorphic specialist to analyze bridge crossing and address as needed.
- Levees- Remove levees on the left bank

Increase flood frequency and duration on 15 acres of available floodplain from the >5yr
interval to <2 yr interval.
o Levees currently are located on the left bank of the Tucannon River and impede floodplain
connection at low flows. Increase floodplain connection by removing these levees with the
option of setting them back
Long Term Objective (3-5 yrs):
Increase floodplain connectivity and channel complexity.
o Maintain > 2 key pieces beyond 10 years
o Anticipated a 50% increase side channels within the first 10 yrs.
o Connect disconnected low floodplain (<2 yr flow) ~ 15 acres
Planting to restore a floodplain and upland terrace forest
o 3,400 trees interstitially planted
5 acres of new cover trees planted
See BDR for more information.

#5: Scope of work and deliverables. Provide a detailed description of each project task/element. With each task/element, identify who will be responsible for each, what the deliverables will be, and the schedule for completion.

Some of the SOW identified below is being funded through Bonneville Power Administration matching fund provided through the CCD.

Task 1 - Preliminary Designs: Preliminary designs will be completed by May 2023. These will take into consideration changes in the project area from winter high flows and new information provided from each post winter Rapid Habitat Survey. This task will be completed by district staff, CD Engineer, SRSRB Fisheries Biologist and staff, and landowner. There is potential for this project to be completed in one phase funding dependent.

Task 2 - Final Designs: Final designs will be completed by October 2023. This task will be completed by district staff, CD Engineer, SRSRB Fisheries Biologist and staff, and landowner. This task will be paid for by extended contract 20-1052 RCO and BPA.

Task 3- Cultural Resources and Permitting: Cultural resources and permitting will be completed following the BPA HIP IV process and will obtain all permits necessary to implement the project. This process has begun and NEPA and SEPA should be completed by August 2023. Shorelines permit is exempt. HPA will be competed by October 2023. The remaining will follow. This task will be done by BPA, district staff and the CD Engineer. This task will be completed by April of 2024.

Task 4 - Bid for Construction and Materials: The bid may include both elements of construction and remaining materials needed or may be separate. The bid process will follow all federal and state regulations. This task will be completed by district staff, CD Engineer and SRSRB Fisheries Biologist. Task will be completed by February of 2024.

Task 5 - Construction: Construction will take place during the time designated by WDFW. It will be completed in summer of 2024 and if needed, subsequently Phase II in the summer of 2025. All contractors will be held to federal, state and Corps regulations. This task will be completed by district staff, CD Engineer, SRSRB Fisheries Biologist and staff, contractor and landowner. Construction of instream, floodplain structures and riparian plantings will be paid for by RCO and BPA. The bridge and swale components will be designed and constructed through WSCC

Task 6 - Post Construction Site Assessment/As-Builts: Multiple post construction site assessments will occur include a rapid habitat assessment immediately post construction and 2 years post construction. As-builts will be completed after initial post construction rapid habitat assessment to include all immediate changes that occurred. This task will be completed by district staff, CD Engineer and SRSRB Fisheries Biologist. This task will be completed by November 2024.

Task 7 - Re-vegetation of the Project Area: Revegetation will take after each construction period of ~10 acres within the project area. This will include trees, shrubs, and grasses all designated CREP eligible. This task will be completed by district staff and contracted crew. This task will be completed by November of 2024.

#6: What are the assumptions and physical constraints that could impact whether you achieve your objectives? Assumptions and constrains are external conditions that are not under the direct control of the project, but directly impact the outcome of the project. These may include ecological and geomorphic factors, land use constraints, public acceptance of the project, delays, or other factors. How will you address these issues if they arise?

Inflation is causing project cost to increase and contractors to be limited which may be a constraint moving forward. To combat this issue we will look to bid out this project in November of 2023, to get ahead of the normal bid window. For possible budgeting constraints we have anticipated inflation to the best of our knowledge and will error on the side of caution (this is reflected in the cost estimate) as the project progresses. We anticipate project pre-staging of materials so that contractors will have them available onsite prior to the work window and avoid impacts from wildfire season constraints. If there are delays in material securing, we will added this component with the early construction contracting obligation/commitments. There are agricultural fields located in close proximity/adjoining this area of the river and have been acknowledge and we will be cautious of project plans not causing damage to infrastructure. Columbia Conservation District has received the acceptance needed to do construction. Landowner constraints are a very real factor in implementing projects on private property. We are continuing to work with the landowner within the project reach to utilize as much floodplain area as possible.

#7: How have lessons learned from completed projects or monitoring studies informed this project?

CCD has adapted a restoration approach based on projects completed across the Tucannon Watershed by various project sponsors. The Regional Technical Team meet for the purpose of design and restoration review and information sharing. We found that by vetting project designs we build better projects. As a part of the design process we will consider restoration techniques that have been successful in light of recent flooding and the restoration permitting constraints currently present in restoration. Then we will develop the best restoration approach for this site as part of the design process. Lessoned learn from previous projects include many things but are not limited to; past anchoring methods not withstanding higher flows, subsequently moving out of position and reposition in ways not intended. CCD has since moved to drive piling the instream structures, a technique utilized frequently on the West side of Washington which have been notably stronger and withstand frequent flooding. Another lesson learned is when going through the design process we've learned its important to not only research and assess the intended project area but a wider scope including areas above and below the intended project. This helps reduce possible issues with neighboring landowners and gives the district a full understanding of what the project will do to those areas since we've seen that impacts act like a ripple effect and do not stay within the designated project area.

#8: Describe the alternatives considered and why the preferred was chosen.

Alternative 1- This alternative addresses the problems by installing LWD structures in the main channel, side channels and on the floodplain. In this alternative up to 60 LWD structures would be installed to; increase instream complexity, pool formation and pool size. The structures will also be designed to activate side channels and increase floodplain connection at lower recurrence interval flows. All disturbed sites would be replanted with native trees and shrubs and reseeded with a native grass mix. Additionally, the bridge on the access road, the Pataha Creek confluence and the Pataha Creek crossing will be assessed by a geomorphic specialist and their recommendations will be incorporated into the design.
Alternative 2- This alternative addresses the problems by installing LWD structures in the main channel, side channels and on the floodplain. In this alternative up to 60 LWD structures would be installed to; increase instream complexity, pool formation and pool size. The structures will also be designed to activate side channels and increase floodplain connection at lower recurrence interval flows. The existing levees located on the left bank would be removed to immediately increase floodplain connectivity. LWD structures would be placed on the floodplain to reduce flood flow velocities, provide complexity and habitat. All disturbed sites would be replanted with native trees and shrubs and reseeded with a native grass mix. Additionally, the access road bridge, the Pataha Creek confluence and the Pataha Creek crossing will be assessed by a geomorphic specialist and their recommendations will be incorporated into thedesign.
Alternative 3- This alternative addresses the problems by installing LWD structures in the main channel, side channels and on the floodplain. In this alternative up to 60 LWD structures would be installed to; increase instream complexity, pool formation and pool size. The structures will also be designed to activate

#9: How were stakeholders consulted in the development of this project? Identify the stakeholders, their concerns or feedback, and how those concerns were addressed.

Project interest was initiated by landowners to enhance the stream reach. There has been restoration activities going on, on this property since 2011. Landowners were involved in all steps of the design process and concerns include floodplain inundation of their agricultural fields and as the river system changes what effects it ill have to their land as well as private infrastructure. These concerns were address with removing certain actions from the plan to reduce this possibility.

#10: Does your project address or accommodate the anticipated effects of climate change?

Yes

#10a: How will your project be climate resilient given future conditions?

The projects restoration actions developed through a professional engineer and outlined in the Tucannon Geomorphic Assessment and Restoration plan (Anchor QEA, 2021) are focused on channel complexity/diversity and floodplain connectivity that buffer the impacts of climate change. Floodplain connectivity is a primary tool for aquifer recharge.

#10b: How will your project increase habitat and species adaptability?

By addressing the limiting factors of floodplain connectivity, river complexity/diversity and sediment transportation/sorting will drive geomorphic processes and create responses in riparian and healthy floodplain. Connected floodplains with healthy riparian forest are more resilient in the face of catastrophic wild fire, better support to the native flora and fauna and in general increase the resiliency of the habitat needed to support salmonids over time. Our restoration strategies conceptualized to directly influence geomorphic processes that will support floodplain connectivity and healthy riparian. This will help provide a more natural process and support multiple wild salmonid species so they may adapt and thrive.

#11: Describe the sponsor's experience managing this type of project. Describe other projects where the sponsor has successfully used a similar approach.

The CCD has been sponsoring salmon habitat restoration projects on private and public lands projects for more than 20 years in the Tucannon. Developing projects from the Tucannon Conceptual Restoration Plans, CCD has completed various projects, some have been a combination of SRFB, BPA/District, BPA Habitat Programmatic and Conservation Commission funds. Also, the CCD has sponsored the recently completed the Tucannon Habitat Restoration Geomorphic Assessment and Restoration Plan (Anchor QEA, 2020). Previous projects include PA 26, Marengo Levee Set Back (2012), PA 15 channel reconstruction and LWD enhancement (2014-15), PA 24, levee removal and LWD enhancement, PA 28, offset levee, LWD and side channel enhancement (2016-18) and PA 32 (2020) offset levee, LWD and floodplain enhancement. The CCD is also working with an experienced engineer who has designed multiple habitat restoration projects for implementation in the Tucannon.

#12: Will veterans (including the veterans conservation corps) be involved in the project? If yes, please describe.

No

Restoration Supplemental

#1: What level of design (per Appendix D) have you completed? Please attach.
Conceptual

#1a: What level of design will be produced prior to construction?
Preliminary /
Field Fit

#1aa: If you are proposing to follow the field fit guidance in **Appendix D** then describe your proposed design process and deliverables to be completed prior to construction. Refer to the project deliverables table from Appendix D in your description.

We are not doing a field fit project and will provide final designs before implementation.

#2: Will (or did) a licensed professional engineer design the project?
Yes

#3: Does the project include measures to stabilize an eroding stream bank?
No

#4: Is the primary activity of the project invasive species removal?
No

#5: Is the primary activity of the project riparian planting?
No

#6: Describe the steps you will take to minimize the introduction of invasive species during construction and restoration. Consider how you will use un-infested materials and clean equipment entering and leaving the project area.

To minimize the introduction of invasive species all contractors and personnel related to the project will follow all rules and regulations as the BPA HIP IV manual and Manual 18 designate.

#7: Describe the long-term stewardship and maintenance obligations for the project.

The district and SRSRB Fisheries Biologist will continue to routine assessments of the project area for the life of the contract and as long as the landowner will allow us on the project site. Within these assessments if maintenance is needed we will make the modifications necessary to keep the project working at an optimal levee.

Restoration Metrics

Worksite: Tucannon PA 34.1 & 34.2 (#1)

Miles of Stream and/or Shoreline Treated or Protected (C.0.b)	1.
Project Identified In a Plan or Watershed Assessment (C.0.c)	Northwest Marine Fisheries Service. 201 ESA Recovery Plan for Snake Riv Spring/Summer Chinook Salm (Oncorhynchus tshawytscha) & Snake Riv Basin Steelhead (Oncorhynchus mykis Portland, C
Priority in Recovery Plan	This project is identified as a top prior and located in a major spawning area Steelhead and a priority restoration rea in the Snake River Salmon Recovery Pl and 3 yr workpla
Type Of Monitoring (C.0.d.1)	Implementation Monitori
Monitoring Location (C.0.d.2)	Ons

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INSTREAM HABITAT PROJECT

Total Miles Of Instream Habitat Treated (C.4.b)	1.

Channel reconfiguration and connectivity (C.4.c.1)

Total cost for Channel reconfiguration and connectivity	$358,0
Type of change to channel configuration and connectivity (C.4.c.2)	Creation of Instream Poo Creation/Connection to C Channel Habit Levee removal/Alterati Meanders Add
Miles of Stream Treated for channel reconfiguration and connectivity (C.4.c.3)	
Miles of Off-Channel Stream Created or Connected (C.4.c.4)	0.
Acres Of Channel/Off-Channel Connected Or Added (C.4.c.5)	23
Instream Pools Created/Added (C.4.c.6)	1

Channel structure placement (C.4.d.1)

Total cost for Channel structure placement	$619,5
Material Used For Channel Structure (C.4.d.2)	Individual Logs (Anchore Logs Fastened Togeth (Logja
Miles of Stream Treated for channel structure placement (C.4.d.3)	1.
Pools Created through channel structure placement (C.4.d.5)	1
Number of structures placed in channel (C.4.d.7)	6

RIPARIAN HABITAT PROJECT

Total Riparian Miles Streambank Treated (C.5.b.1)	1.
Total Riparian Acres Treated (C.5.b.2)	26

Planting (C.5.c.1)

Total cost for Planting	$23,0
Species Of Plants planted in riparian (C.5.c.2)	Ponderosa Pine Golden Current Mo Orange Willo
Acres Planted in riparian (C.5.c.3)	26
Miles of streambank planted (C.5.c.4)	
Average Riparian Width	
Site Potential Tree Height at 200 years (SPTH-200)	130' t

CULTURAL RESOURCES

Cultural resources

Total cost for Cultural resources	$13,0
Acres surveyed for cultural resources	50.

PERMITS

Obtain permits

Total cost to Obtain permits	$2,3
Number of permits required for implementation of project	

ARCHITECTURAL & ENGINEERING

Architectural & Engineering (A&E)

Total cost for Architectural & Engineering (A&E)	$40,2

Overall Project Metrics

COMPLETION DATE	
Projected date of completion	12/31/20

Restoration Cost Estimates

Worksite #1: Tucannon PA 34.1 & 34.2

Category	Work Type	Estimated Cost	Note
Cultural Resources	Cultural resources	$13,000	
Instream Habitat Project	Channel reconfiguration and connectivity (C.4.c.1)	$358,068	
	Channel structure placement (C.4.d.1)	$619,500	
Permits	Obtain permits	$2,300	
Riparian Habitat Project	Planting (C.5.c.1)	$23,000	
	Subtotal:	$1,015,868	
Admin, Architecture, and Engineering		$40,200	
	Total Estimate For Worksite:	$1,056,068	

Summary

Total Estimated Costs Without AA&E:	$1,015,868
Total Estimated AA&E:	$40,200
Total Estimated Restoration Costs:	$1,056,068

Cost Summary

	Estimated Cost	Project %	Admin/AA&E %
Restoration Costs			
Restoration	$1,015,868		
Admin, Architecture, and Engineering	$40,200		3.96 %
SUBTOTAL	$1,056,068	100.00 %	
Total Cost Estimate	$1,056,068	100.00 %	

Funding Request and Match

FUNDING PROGRAM

Salmon State Projects	$484,500	45.877728

SPONSOR MATCH

Other Monetary Funding	Grant - Federal	
Amount		$428,224.
Funding Organization		Bonneville Power Administration (BP
Grant Program		Programma
Other Monetary Funding	Grant - State	
Amount		$143,344.
Funding Organization		Washington State Conservati Commissi
Grant Program		Salmon Recovery Fundi
	Match Total:	$571,56854.122272
	Total Funding Request (Funding + Match):	$1,056,068100.000000

Questions

#1: Explain how you determined the cost estimates

Reference resources and time used to complete previous design projects.

Cultural Resources

Cultural Resource Areas

Worksite #1: Tucannon PA 34.1 & 34.2

Area: APE

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

Alternative 3- This alternative addresses the problems by installing LWD structures in the main channel, side channels and on the floodplain. In this alternative up to 60 LWD structures would be installed to; increase instream complexity, pool formation and pool size. The structures will also be designed to activate side channels and increase floodplain connection at lower recurrence interval flows. The existing levees located on the left bank would be removed to immediately increase floodplain connectivity. LWD structures would be placed on the floodplain to reduce flood flow velocities, provide complexity and habitat. To protect existing infrastructure setback levees would be constructed as shown on the plan. All disturbed sites would be replanted with native trees and shrubs and reseeded with a native grass mix. Additionally, the bridge on the access road, the Pataha Creek confluence and the Pataha Creek crossing will be assessed by a geomorphic specialist and their recommendations will be incorporated into the design.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

TBD

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

TBD

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing conditions for the project reach were detailed in the following passages from the Conceptual Restoration Plan (Anchor QEA, 2011): 4.1.1.1 Channel Characterization Based on air photo and LiDAR interpretation, the mainstem consists of a single-thread channel throughout most of the project area. Levees exist along much of the right bank throughout the entire project area and to a lesser degree along the left bank. These are in place to limit channel migration and flooding into and on the adjacent agricultural lands. This has resulted in incised channel conditions through much of the project area, with limited channel and habitat diversity. In the downstream extent of the project area, from approximately RM 12.1 to 11.45, the channel appears to be more diverse with good habitat diversity and channel complexity. Side channels are evident in the 2010 air photos near Reach 4 Conceptual Projects Conceptual Restoration Plan Reaches 3 and 4 October 2012 Tucannon River 27 120687-01.01 RM 11.6. The main channel flows along the valley wall throughout a portion of the project area. Pataha Creek is a right bank tributary at approximately RM 12.5. 4.1.1.2.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

Yes

#6a: Please list the federal agency and funding sources.

Bonneville Power Administration

#6b: Does the federal funding you are utilizing as match require you to receive state funding?

no

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

No

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Project Permits

Permits and Reviews	Issuing Organization	Applied Date	Received Date	Expiration Date	Permit #
Cultural Assessment [Section 106]	DAHP				
Dredge/Fill Permit [Section 10/404 or 404]	Army Corps of Eng.				
Hydraulics Project Approval [HPA]	Dept of Fish & Wildlife				
SEPA	Local or State				
Shoreline Permit	City/County				
Other Required Permits					

Note: Floodplain Permit

Permit Questions

#1: Are you planning on using the federal permit streamlining process? **Limit 8**

No

Attachments

Required Attachments	6 out of 6 done
Applicant Resolution/Authorizations	✓
Cost Estimate	✓
Landowner acknowledgement form	✓
Map: Restoration Worksite	✓
Photo	✓
RCO Fiscal Data Collection Sheet	✓

PHOTOS (JPG, GIF)

Photos (JPG, GIF)


550931


550932


550933


550934


554808

PROJECT DOCUMENTS AND PHOTOS

Project Documents and Photos

Project Application Report - 23-1028

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Sha
	06/09/2023	Design document	Appendix C Hydraulic model results PA 34 Tucannon.pdf	AneeshaD	Appendix C Hydraulic model results PA 34 Tucannon.pdf, 565167	✓
	06/09/2023	Design document	Appendix B Reach Profile-Cross-Sections PA 34 Tucannon.pdf	AneeshaD	Appendix B Reach Profile-Cross-Sections PA 34 Tucannon.pdf, 565166	✓
	06/09/2023	Design document	Appendix A Plans PA 34 Tucannon.pdf	AneeshaD	Appendix A Plans PA 34 Tucannon.pdf, 565165	✓
	06/09/2023	Preliminary design report	PA 34.1-2 Preliminary Design Report.pdf	AneeshaD	PA 34.1-2 Preliminary Design Report.pdf, 565164	✓
	06/09/2023	Design document	PA 34 Design Preliminary	AneeshaD	PA 34 Design 032023.pdf, 565163	✓
	05/24/2023	Application Review Report	Grant Manager Comments, 23-1028R(rtnd 05/24/23 15:30)	KendallB	Grant Manager Comments Report - 23-1028 (rtnd 05-24-2023_15-30-56).pdf, 563817	✓
	05/16/2023	Application Document	20-1052 Design Review Memo Dec 2022.pdf.PDF	AliceR	Design Review Memo Dec 2022.pdf.pdf, 563046	✓
	05/16/2023	Application Document	20-1052 Tucannon PA 34.1 Concept Review Comments.PDF	AliceR	20-1052 Tucannon PA 34.1 Concept Review Comments.pdf, 563045	✓
	05/15/2023	SRFB Review Panel Comment Form	20-1052 Tucannon PA 34.1 Concept Review Comments	KendallB	20-1052 Tucannon PA 34.1 Concept Review Comments.pdf, 562956	✓
	05/15/2023	SRFB Review Panel Comment Form	Design Review Memo Dec 2022.pdf	KendallB	Design Review Memo Dec 2022.pdf.pdf, 562955	✓
	04/14/2023	Project Application Report	Project Application Report, 23-1028R (sub 04/14/23 13:49:31)	AneeshaD	Project Application Report - 23-1028 (submitted 04-14-2023_13-49-31).pdf, 558222	✓
	04/14/2023	Applicant Resolution/Authorizations	ApplicantAuthorizationResolution.pdf	AliF	ApplicantAuthorizationResolution.pdf, 558221	✓
	03/16/2023	Landowner acknowledgement form	Ed Hedlund - Acknowledgement.pdf	AneeshaD	Ed Hedlund - Acknowledgement.pdf, 554809	
	03/16/2023	Design document	Stream Power RAS Mapper PA 34 - Avg 2 year flow.jpg	AneeshaD	Stream Power RAS Mapper PA 34 - Avg 2 year flow.jpg, 554808	✓
	03/16/2023	Map: Restoration Worksite	34.1-34.2 Worksite Map.pdf	AneeshaD	34.1-34.2 Worksite Map.pdf, 554795	✓
	03/16/2023	Map: Multi-site and geographic envelope	34.1-34.2 Vicinity Map.pdf	AneeshaD	34.1-34.2 Vicinity Map.pdf, 554794	✓
	03/16/2023	Map: Area of Potential Effect (APE)	34.1-34.2 APE Map.pdf	AneeshaD	34.1-34.2 APE Map.pdf, 554793	✓
	03/16/2023	Cost Estimate	Copy of SAL-CostEstimate 34.1 34.2 Construction - Alt 1 mod	AneeshaD	Copy of SAL-CostEstimate 34.1 34.2 Construction - Alt 1 modified.xlsx, 554792	✓
	03/16/2023	Preliminary design report	PA 34 Preferred Alternative March 2023.pdf	AneeshaD	PA 34 Preferred Alternative March 2023.pdf, 554789	✓
	03/14/2023	Visuals	Floodplain Map - Relative Elevations & Reconnecting Floodpla	AneeshaD	Floodplain Map - Relative Elevations & Reconnecting Floodplain.pdf, 554530	✓
	03/14/2023	Visuals	Floodplain Map - Disconnected 2 & 5 year.pdf	AneeshaD	Floodplain Map - Disconnected 2 & 5 year.pdf, 554529	✓
	03/10/2023	Landowner acknowledgement form	RCO-LandownerAcknowledgementForm - Rubenser - signed.pdf	AneeshaD	RCO-LandownerAcknowledgementForm - Rubenser - signed.pdf, 554249	
	02/15/2023	Map: Restoration Worksite	Relative elevations.pdf	AneeshaD	Relative elevations.pdf, 551840	✓
	02/06/2023	RCO Fiscal Data Collection Sheet	FiscalDataCollectionSheet.pdf.PDF	AneeshaD	FiscalDataCollectionSheet.pdf.pdf, 550939	
	05/16/2023	Photo	17.jpg	AliceR	17.jpg, 550934	✓
	02/06/2023	Photo	15.jpg	AneeshaD	15.jpg, 550933	✓
	05/16/2023	Photo	8.jpg	AliceR	8.jpg, 550932	✓
	02/06/2023	Photo	5.jpg	AneeshaD	5.jpg, 550931	✓
	01/12/2023	Project Review Comments	Project Review Comments Report, 23-1028R (01/12/23 08:30:47)	BartL	Project Review Comments Report - 23-1028 (01-12-2023_08-30-47).pdf, 547766	✓
	01/12/2023	Project Application Report	Project Application Report, 23-1028R (01/12/23 08:30:47)	BartL	Project Application Report - 23-1028 (01-12-2023_08-30-47).pdf, 547765	✓
	01/12/2023	Project Review Comments	Project Review Comments Report, 23-1028C (01/12/23 08:29:39)	BartL	Project Review Comments Report - 23-1028 (01-12-2023_08-29-39).pdf, 547764	✓
	01/12/2023	Project Application Report	Project Application Report, 23-1028C (01/12/23 08:29:39)	BartL	Project Application Report - 23-1028 (01-12-2023_08-29-39).pdf, 547763	✓

Application Status

Application Due Date: 06/27/2023

Status Name	Status Date	Submitted By	Submission Notes
Application Resubmitted	06/22/2023	Aneesha Dieu	
Application Returned	05/24/2023	Kendall Barrameda	
Application Submitted	04/14/2023	Aneesha Dieu	
Preapplication	01/09/2023		

I certify that to the best of my knowledge, the information in this application is true and correct. Further, all application requirements due on the application due date have been fully completed to the best of my ability. I understand that if this application is found to be incomplete, it will be rejected by RCO. I understand that I may be required to submit additional documents before evaluation or approval of this project and I agree to provide them. (Aneesha Dieu, 06/22/2023)

Date of last change: 06/22/2023